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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,278	02/18/2004	Arun S. Wagh	ANL 261	4207

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EXAMINER

FIORITO, JAMES

ART UNIT PAPER NUMBER

1754

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/782,278

Applicant(s)

WAGH ET AL.

Examiner

James A. Fiorito

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/20/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On page 9 paragraph 4 the applicant recites "alpha alumina (Y – alumina)" but it is unclear what is meant by this recitation because alpha alumina is normally designated with the Greek symbol for alpha which is not "Y". The specification therefore does not clearly define which alumina is used in the process.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1,15 and 20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 15 recite the limitation "the oxides or halides" in Lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claims 1, 15 and 20 recite "y alumina" as a material used in the instant invention, however it is unclear as to what type of alumina the applicant considers "y alumina" to be.

Claims 1 and 15 state that the nuclear material may contain oxides or halides of actinides, and/or transuranics, and/or hydrocarbons and /or acids contaminated with

Art Unit: 1754

actinides, it is unclear which of the components of the nuclear material must be an oxide or a halide, and which materials the claims require.

Claims 1 and 15 state "the nuclear material by adjusting the pH of the nuclear material or any portion thereof to be not less than about 5 if required", it is unclear what the requirements are necessary to apply this limitation.

Claim 20 states that the nuclear material may contain oxides or halides of actinides, and/or transuranics, and/or hydrocarbons and /or acids contaminated with actinides. It is unclear which of the components of the nuclear material must be an oxide or a halide.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 and 12-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagh '815 in view of Kreuzmann '861 and Notari '888.

Wagh teaches a method of stabilizing nuclear waste materials cerium, uranium and plutonium with an initial pH of about 6.2 (Column 8 Example 4). Wagh teaches the step of adding a binder consisting of MgO and KH_2PO_4 to the waste materials (Column 8 Example 4). The MgO and waste are typically mixed in equal weight percentages, but may vary up to a ratio of waste to MgO of 85:15 (Column 4 Lines 48-60). The weight ratio of the MgO to KH_2PO_4 is selected from the range of 87:13 to 77:23 (Column 5 Line

Art Unit: 1754

34-43). Wagh further teaches that fly ash (Column 9 Example 7), boric acid (Column 9 Example 7) and calcined MgO (Column 8 Example 5) may be used in the stabilizing method.

Wagh does not expressly teach the step of adding sufficient MgO to convert fluorides present to MgF_2 .

Kreuzmann teaches a process of recovering uranium from UF_4 using MgO. During the process MgO is converted in MgF_2 (Column 3 Example 3). Wagh and Kreuzmann are analogous art because they are from the same field of endeavor, namely processes that treat radioactive materials.

At the time of invention it would have been obvious to a person of ordinary skill in the art to form the process of Wagh to include the step of adding sufficient MgO to convert fluorides present to MgF_2 in view of Kreuzmann. The suggestion or motivation for doing so would have been to recover the Uranium prior to adding the binder (Column 3 Example 3).

Wagh and Kreuzmann do not teach the step of adding Y alumina in an amount suffice to absorb substantially all hydrocarbon liquid present.

Notari discloses a process of forming alumina to be used as an absorbent of hydrocarbons (Column 1 Lines 33-37). Notari further teaches that absorbent can be formed in both the alpha alumina and gamma alumina allotropic states (Column 2).

At the time of invention it would have been obvious to a person of ordinary skill in the art to form the process of Wagh in view of Kreuzmann to include the step of adding Y alumina in an amount suffice to absorb substantially all hydrocarbon liquid present in

Art Unit: 1754

view of Notari. The suggestion or motivation for doing so would have been to further purify or convert hydrocarbonaceous material that could be in the waste (Column 1 Example 33-40).

With respect to claims 20-27, the process of Wagh in view of Kreuzmann and Notari as discussed above would produce the crystalline material of the instant claims.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wagh '815 in view of Kreuzmann '861 and Notari '888 as applied to claims 1-10 and 12-27 above, and further in view of Goodson '622.

Wagh in view of Kreuzmann and Notari does not expressly state that the tetravalent metal oxide is one or more of titania or zirconia.

Goodson teaches a process of making a phosphate cement coating wherein the tetravalent metal oxide titania or zirconia may be used to form the cement (Paragraph 38 and 39). Goodson and Wagh in view of Kreuzmann and Notari are analogous art because they are from the same field of endeavor namely processes that use phosphate cements.

At the time of invention it would have been obvious to a person of ordinary skill in the art to form the process of Wagh in view of Kreuzmann and Notari to include the tetravalent metal oxide is one or more of titania or zirconia in view of Goodman. The suggestion or motivation for doing so would have been to slow down the reaction between the metal oxide and the mono potassium phosphate (MKP) (Paragraph 36 and 39).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Fiorito whose telephone number is (571)272-7426. The examiner can normally be reached on 9am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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